National Institute of Environmental Health Sciences

Extreme water-related weather events and waterborne disease

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Abstract:

Global climate change is expected to affect the frequency, intensity and duration of extreme water-related weather events such as excessive precipitation, floods, and drought. We conducted a systematic review to examine waterborne outbreaks following such events and explored their distribution between the different types of extreme water-related weather events. Four medical and meteorological databases (Medline, Embase, GeoRef, PubMed) and a global electronic reporting system (ProMED) were searched, from 1910 to 2010. Eighty-seven waterborne outbreaks involving extreme water-related weather events were identified and included, alongside 235 ProMED reports. Heavy rainfall and flooding were the most common events preceding outbreaks associated with extreme weather and were reported in 55.2% and 52.9% of accounts, respectively. The most common pathogens reported in these outbreaks were Vibrio spp. (21.6%) and Leptospira spp. (12.7%). Outbreaks following extreme water-related weather events were often the result of contamination of the drinking-water supply (53.7%). Differences in reporting of outbreaks were seen between the scientific literature and ProMED. Extreme water-related weather events represent a risk to public health in both developed and developing countries, but impact will be disproportionate and likely to compound existing health disparities.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3594835

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Quality

Extreme Weather Event: Drought, Flooding, Hurricanes/Cyclones

Food/Water Quality: Pathogen

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Campylobacteriosis, Cholera, Cryptosporidiosis, E. coli, Giardiasis, Leptospirosis, Norovirus, Rotavirus, Salmonellosis, Shigellosis, Vibrioses

Foodborne/Waterborne Disease (other): Hepatitis; Adenovirus; Enterovirus; Burkholderia; Yersinia; Aeromonas; Acanthamoeba; Cyclospora

Medical Community Engagement:

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Review

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

time period studied

Time Scale Unspecified